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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/696,005	10/29/2003	William J. Palmteer	18117[1111-03]	7102

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EXAMINER	
KANG, DONGHEE	
ART UNIT	**PAPER NUMBER**
2811	

DATE MAILED: 12/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/696,005	PALMTEER ET AL.	
	Examiner	Art Unit	
	Donghee Kang	2811	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 October 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17* is/are pending in the application.

4a) Of the above claim(s) *9-13* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8 and 14-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *16 January 2004* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *10/29/03*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Claims 9-13 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on October 08, 2004.

Information Disclosure Statement

2. Acknowledgment is made of receipt of applicant's Information Disclosure Statement (PTO-1449) field October 29, 2004.

Drawings

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the limitation "**a lens disposed in a conical recess in the reflector layer**" in claims 16 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for

consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-3 & 14-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Nakajima (JP 06232457).

Re claims 1& 14, Nakajima teaches a light emitting device comprising (Fig.1):

An electrically insulating substrate layer (1) with at least one light emitting diode (4) disposed thereon: a non-conductive layer (7) disposed on the electrically insulating substrate layer; and a reflector layer (9) disposed on the non-conductive layer. See also abstract.

Re claim 2, Nakajima teaches the reflector layer includes a conical portion.

Re claims 3 & 15, Nakajima teaches the electrically insulating layer further comprises at least one metallized portion (3) which is coupled to the light emitting diode.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 1-5 & 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hayashimoto et al. (US 2004/0211970) in view of Ishinaga (US 6,355,946).

Re claims 1 & 14, Hayashimoto et al. teach a light emitting device comprising (Fig.1):

a substrate layer (10) with at least one light emitting diode (11) disposed thereon: a non-conductive layer (19) disposed on the electrically insulating substrate layer; and a reflector layer (18) disposed on the non-conductive layer. See also paragraph 0031-0048.

Hayashimoto et al. do not explicitly teach the substrate layer 10 is an electrically insulating. However, it is so obvious that the substrate is required to have excellent insulating layer to space two electrodes (anode and cathodes) so as to be electrically insulated. Ishinaga clearly teach the substrate 1A comprising a ceramic material which has an excellent insulating and heat-resistant properties to provide an electrical isolation between two electrode (anode and cathodes). See Fig.3 and Col.3, lines 45-53. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to form the substrate having an electrically insulating layer such as ceramic material as taught by Ishinaga in Hayashimoto's device in order to provide an electrical isolation between anode and cathodes so as to properly operate the device.

Re claim 2, Hayashimoto as modified by Ishinaga teach the reflector layer includes a conical portion.

Re claims 3 & 4, Hayashimoto as modified by Ishinaga teach the electrically insulating layer further comprises at least one metallized portion (12) on a first surface and second surface opposite said first surface.

Re claim 5, Hayashimoto as modified by Ishinaga teach the reflector layer is made of metal material such as aluminum and the electrically insulating substrate layer is made of ceramic material. Althoug Hayashimoto as modified by Ishinaga explicitly do not teach that a coefficient of thermal expansion (CTE) of the reflector layer is matched to a CTE of a the electrically insulating substrate layer, this feature is inherent because both devices have same materials (ceramic and aluminum).

8. Claims 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hayashimoto et al. (US 2004/0211970) in view of Ishinaga (US 6,355,946) as applied to claim 1 above, and further in view of Kilian (US 2004/0190836).

Re claim 6, Hayashimoto as modified by Ishinaga teach the non-conductive layer is made aluminum oxide but not teach glass. However,the glass material is well known non-conductive material and also Kilian teaches the glass material (54, Fig1) used for fuse two layer. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute the non-conductive material of Hayashimoto with glass which is matched to a CTE of the electrically insulating substrate layer and reflector layer as taught by Kilian since it has been held to be within

the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as matter of obvious design choice. In re Leshin, 125 USPQ 416.

9. Claims 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hayashimoto et al. (US 2004/0211970) in view of Ishinaga (US 6,355,946) and further in view of Waitl et al. (US 6,610,563).

Hayashimoto as modified by Ishinaga do not teach the light emitting device further comprising a lens disposed in a conical recess in the reflector layer and lies overtop of the at least one light emitting diode.

Waitl et al teach the light emitting device comprising a lens (16) disposed in a conical recess in the reflector layer and lies overtop of the at least one light emitting diode (Fig.2C) to obtain better light emission efficiency. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to for the lens as taught by Waitl in Hayashimoto's device since an output light is transmitted through the lens so that the light emission efficiency of the light emitting device is enhanced.

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Donghee Kang whose telephone number is 571-272-1656. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie C. Lee can be reached on 571-272-1732. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Donghee Kang, Ph.D.
Primary Examiner
Art Unit 2811

dhk